

## 11th Annual iCons Senior Exposition

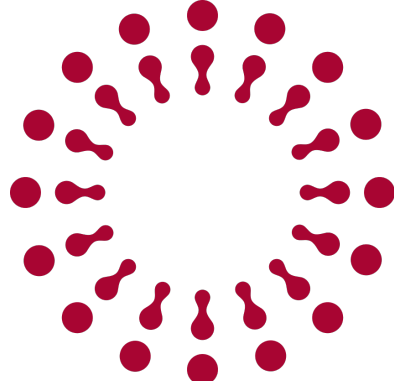
May 13, 2024 | 6:00 - 8:30 pm  
Integrative Learning Center (ILC) - UMass Amherst



**Senior Presentations | 6:00 - 7:00 pm**  
**ILC S220 and S231**

**Honorary Lectures and Awards | 7:00 - 8:30 pm**  
**ILC S211**

*With congratulatory comments from Richard Mahoney '55, Founder of iCons and opening welcome from Dr. Mari Castañeda, Dean of the Commonwealth Honors College*



### Senior Presentations

**Session A**  
**6:00 - 6:30 pm**

**Antonia Amonu McCarthy | Biology**  
*Mapping inclusive research environments for student of color*  
Advisor: Erica Light, Education

**Sebastian Armstrong | Electrical Engineering**  
*Region Two Control of a Small Wind Turbine under Turbulence*  
Advisor: Matthew Lackner, Mechanical and Industrial Engineering

**Frank Catalano | Animal Science**  
*The effects of origin of birth on the reproduction of animals*  
Advisor: Carlos Gradil, Veterinary & Animal Sciences

**Ryan Dougherty | Environmental Sciences**  
*V2G at UMass: Crowdsourcing Electricity for Campus by 2035*  
Advisor: Dwayne Breger, Clean Energy Extension

**Amira Garba | Informatics**  
*V2G: Energy Demand and Predictions for Electric Vehicles*  
Advisor: Dwayne Breger, Clean Energy Extension

**Emma Gerace | Biochemistry & Molecular Biology**  
*Role of Cell Death Pathways Activated During Reversible and Irreversible Electroporation*  
Advisor: Govind Srimathveeravalli, Mechanical and Industrial Engineering

**Julia Hatzis | Natural Resource Conservation**  
*Patterns of Habitat Preference, Activity, and Species Interactions of White-tailed Deer in Amherst, MA*  
Advisor: Kelly Klingler, Environmental Conservation

**Leila Imani | Biology**  
*Which Cells Can Survive on Pyruvate and no Glucose*  
Advisor: Andrew Stephens, Biology

**Chang Jin | Computer Science**  
*Bits and Bytes of Well-being: Decoding Mental Health for College Students in Computer Science*  
Advisor: Caryn Brause, Architecture

**Heena Kraemer | Environmental Science**  
*How We Fail Our Most Vulnerable: The EPA and Environmental Injustice*  
Advisor: Kathleen Brown-Perez, Anthropology

**Morgan Lance | Operations & Information Management and Biology**  
*Developing an Alternative Acne Treatment Based on Antimicrobial Bacteriocins*  
Advisor: Margaret Reilly, Microbiology

**Devesh Maheshwari | Industrial Engineering**  
*Chest Tube Caddy*  
Advisor: Bernd Schliemann, Mechanical and Industrial Engineering

**Skye McMorris | Biochemistry & Molecular Biology**  
*Finding the genes that make legume plants more sustainable*  
Advisor: Dong Wang, Biochemistry & Molecular Biology

**Lauren Miguel | Biology and Italian Studies**  
*Navigating the Healthcare Labyrinth: A Comprehensive Analysis of Decision-Making and AI in Clinical Use*  
Advisor: Hossein Pishro-Nik, Electrical & Computer Engineering

**Jack Minella | Environmental Science**  
*Assessing the Relative Sustainability of Grab 'N Go Container Systems at UMass Amherst*  
Advisor: Craig Nicolson, Environmental Conservation

**Oghosasere Osunde | Chemical Engineering**  
*Investigating the Effect of Using Divalent Precursors in MFI Zeolite Synthesis on CO2 Capture*  
Advisor: Wei Fan, Chemical Engineering

**Benjamin Pepper | Chemical Engineering**  
*Visualizing Astrocyte Response to Mild Traumatic Brain Injury*  
Advisor: Shelly Peyton, Chemical Engineering

**Anvitha Ramachandran | Computer Science and Computer Systems Engineering**  
*legv8sim: An Assembly Development Toolchain*  
Advisor: Jeremy Gummeson, Electrical and Computer Engineering

**Ariana Swoyer | Biology**  
*3D bone tissue engineering utilizing pepsin-digested demineralized bone matrix*  
Advisor: Jungwoo Lee, Chemical Engineering

**Gabrielle Walczak | Mathematics**  
*Using Nonlinear Regression Models to Assess the Importance of Genetics Markers on Disease Progression*  
Advisor: Maryclare Griffin, Mathematics & Statistics

**Session B**  
**6:30 - 7:00 pm**

**Elizabeth Belezaire | Physics**  
*Impacts of Climate Change and Fishing on Swimming-Length Dependent Biomass Dynamics in Marine Ecosystems*  
Advisor: Adrian Jordaan, Environmental Conservation

**Heather Bortolussi | Environmental Science**  
*Investigating the Influence of Aquatic Invertebrate Biomass and Richness on Methylmercury Concentrations in Brook Trout *Salvelinus fontinalis**  
Advisor: NAME, DEPARTMENT

**Isabella Ceresia | Biology**  
*Evaluating factors contributing to common loon egg hatching success in the Quabbin Reservoir*  
Advisor: Allison Roy, Natural Resource Conservation

**Grainne Flanagan | Mechanical Engineering**  
*Wind & Solar Educational System*  
Advisor: Jim Lagrant, Mechanical and Industrial Engineering

**Kyleigh Hairston | Public Health Sciences**  
*A Thematic Analysis: The Role of School Receptiveness on the Wellbeing of Students and Community*  
Advisor: Linnea Evans, Health Promotion & Policy

**Cleo Hein | Industrial Engineering**  
*Assembly Optimization of Pelican's BX255 Cargo Case*  
Advisor: Ana Muriel, Mechanical and Industrial Engineering

**Henry Jordan | Physics and Mathematics**  
*Trapping of Bubbles in Water Waves*  
Advisor: Varghese Mathai, Physics

**Luke Joseph | Chemical Engineering**  
*Analysis of the Kinetics for Rhenium-Catalyzed Deoxydehydration of Vicinal Diols*  
Advisor: Friederike Jentoft, Chemical Engineering

**Amelia Laino | Biology**  
*The Intersectionality of Period Poverty and Incarceration*  
Advisor: Caralyn Zehnder, Biology

**Michael Leyfer | Environmental Science**  
*IODP Expedition 374: Fossil Foraminifera as Proxies for Paleoclimate and Oceanography Changes in the Antarctic Ross Sea*  
Advisor: R. Mark Leckie, Earth, Geographic, and Climate Sciences

**Chaya Lipman-Tessicini | Psychology and Nutrition**  
*Oral Contraceptive Use in Migraine Prevention*  
Advisor: Sarah Gonzalez-Nahm, Nutrition

**Isabella MacNaughton | Biomedical Engineering**  
*Optimizing Multicolor Nanoprobes for Electron Microscopy*  
Advisor: Samantha Wojda, Biomedical Engineering

**Phibi Ngankam | Biochemistry & Molecular Biology and Psychology**  
*Empowering Underrepresented Students in STEM Labs*  
Advisor: Laura Figueroa, Environmental Conservation

**Fay Paicos | Environmental Science**  
*A Critical Examination of Ethical Concerns in Electric Mobility*  
Advisor: Dwayne Breger, Clean Energy Extension

**Carter Paul | Chemical Engineering**  
*Utilization of Viscoelastic Microfluidics in Separation of Yeast Cells*  
Advisor: Sarah Perry, Chemical Engineering

**Hana Power | Public Health Science**  
*The effects of perinatal exposures to propylparaben on the development and morphology of the mammary gland in female mice in early adulthood*  
Advisor: Laura Vandenberg, Public Health Science

**Henry Raughley | Biochemistry & Molecular Biology**  
*Investigation of Physical Interactions between Essential Mitochondrial DNA Polymerase Paralogs in *Trypanosoma brucei**  
Advisor: Michele Klingbeil, Microbiology

**Sam Saunders | Finance**  
*Intergenerational Equality vs. Intragenerational Equality*  
Advisor: Hernan Bejarano, Resource Economics

**Pranav Viswanathan | Chemistry**  
*Self Assembly and Phase Behavior in Polyzwitterion Solutions*  
Advisor: Murugappan Muthukumar, Polymer Science & Engineering

**Hailey Warman | Biomedical Engineering**  
*Developing an Assistive Device for a Cricothyrotomy*  
Advisor: Samantha Wojda, Biomedical Engineering

**Robert Li | Biology**  
**Skye McMorris | Biochemistry & Molecular Biology**  
**Edward Pham | Biochemistry & Molecular Biology**  
**Morgan Rollins | Pre-Veterinary Science**

**We congratulate the students who received the iCons Certificate in February 2024:**

### Honorary Lectures

**Anna Biondo | Building & Construction Technology**  
*Can Concrete Save the World?*  
Advisor: **Munkaila Musa, Building & Construction Technology**

**Kabeera Singh | Informatics and Economics**  
*Garden Design Made Easy with AI*  
Advisor: **Phathany Bradley, Environmental Conservation**

**Madison Perry | Industrial Engineering**  
*Ensuring Driving is Teachable to Teens*  
Advisor: **Shannon Roberts, Mechanical and Industrial Engineering**

**Kushagra Srivastava | Computer Science**  
*From Code to Energy Conservation*  
Advisor: **Joe Chiu, Computer Science**

### Awards

**Mahoney Alumni Award**  
**Marinna Teixeira '16** - Environmental Science  
Greentown Labs | Director of Programs

**Crowley-Nowick Award for iCons Student Leadership and Philanthropy**  
**Claudia Figueroa-Pabón '25** - Biomedical Engineering  
**Shiven Patel '26** - Computer Science

**Crowley-Nowick Scholarship**  
**Reagan Heath '27** - Public Health Sciences

**Thank you to the following for their generous support of the iCons Program**

Mahoney Family Sponsorship  
Chleck Family Foundation  
Dr. Edward Marram '59, '61G and Dr. Karen Carpenter

### iCons Industry Consortium

Impact Nano  
Lumanity Medical Affairs  
Waters Corporation  
Western MA Economic Development Council

### iCons Advisory Board and Faculty and Admissions Teams

**Advisory Board**  
Peggy Crowley-Nowick '86, Lumanity Medical Affairs  
Michael Fogwill, Waters Corporation  
Jennifer Fonstad, Owl Capital  
Samantha Rose Giffen '16  
Judith Glaven, Howard Hughes Medical Institute  
Robert Langer, Massachusetts Institute of Technology  
Edward Marram '59, '61G  
David O'Connor, ML Strategies  
Mark Tuominen, CNS Dean's Office  
Wilmore Webley '00G, '03PhD, Microbiology

**iCons 1**  
Sasha Atkins, Environmental Health Sciences  
Wei Fan, Chemical Engineering  
Paul Wolff, iCons

**iCons 2**  
Allison Hunter, College of Education  
Jamie Jang, Architecture  
Jared Starr, iCons  
Ann-Marie Sylvia, iCons



**iCons 3**  
Martin Hunter, Biomedical Engineering  
Erica Lunter, College of Education  
Seema Ravandale, Environmental Conservation  
Mila Sherman, Finance  
Betsy Schmidt, Public Policy  
Nick Tooker, Civil and Environmental Engineering

**iCons 4**  
Scott Auerbach, Chemistry and Chemical Engineering

**iCons Admissions Committee**  
Tricia Canavan  
Jessica Capri '15  
Jack Moody '21  
Christine Hatch, Earth, Geographic, and Climate Sciences  
Maya Iglesias '23  
Jay Leonard, Isenberg School of Management  
Lauren Miguel '24  
Aurelia Reynolds '21  
Morgan Rollins '24  
Hansen Tjo '21  
Carter Wall, FirstLight Power